

# KAM

## INSTRUCTION MANUAL

# KWM1960

## UHF wireless systems

M A N U A L V E R S I O N 4 . 0  
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Due to continuous product development, please ensure that you have downloaded the latest instruction manual for this product from the Kam website at [www.kam.co.uk](http://www.kam.co.uk)

For the latest instruction manual updates and information on the entire Kam range visit:

**[www.kam.co.uk](http://www.kam.co.uk)**

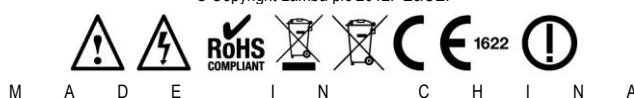
Kam products are manufactured by: **Lamba plc**, Unit 1, Southfields Road, Dunstable, Bedfordshire, United Kingdom LU6 3EJ

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If this product is ever no longer functional please take it to a recycling plant for environmentally friendly disposal.

Due to continuous product development, specifications and appearance are subject to change.

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**Thank you for purchasing this Kam product, we are sure that it will serve you for many years to come.**

To optimise the performance of this product, please read these operating instructions carefully to familiarise yourself with the basic operations of this unit. Please retain them for future reference. This unit has been tested at the factory before being shipped to you.

To prevent or reduce the risk of electrical shock or fire, do not expose the unit to rain or moisture. To prevent a fire hazard, do not expose the unit to any naked flame sources. Unplug this apparatus during lightning storms or if it is unlikely to be used for long periods of time.

When installing the unit, please ensure you leave enough space around the unit for ventilation. Slots and openings in the unit are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. To prevent fire hazard, the openings should never be blocked or covered.

If the unit is powered by the mains, always handle the power cable by the plug. Never pull out the plug by pulling on the cable. Never touch the power cable when your hands are wet as this could cause an electric shock. Do not tie a knot in the cable. The power cable should be placed such that it is not likely to be stepped on. A damaged power cable can cause a fire or give you an electrical shock. Check the power cord periodically, if you ever find that it is damaged, replace it before using the unit again. Contact your retailer for a replacement.

The voltage of the available power supply differs according to country or region. Be sure that the power supply voltage of the area where this unit is to be used meets the required written on the unit.

**The lightning flash symbol inside a triangle is to alert the user to the presence high voltage within the unit's enclosure that may be of sufficient power to constitute a risk of electrical shock to persons.**

**Caution: to prevent the risk of electric shock, do not attempt to open the unit. No user-serviceable parts inside. Refer all servicing to qualified service personnel.**

**The exclamation mark inside a triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.**

Select the installation location of your unit carefully. Avoid placing it in direct sunlight or locations subject to vibration and excessive dust. Do not use the unit where there are extremes in temperature (below 41°F / 5°C or exceeding 95°F / 35°C).

**Unpacking and safety** Please unpack your new product carefully. Your new product should reach you in perfect condition. Please check that no damage has occurred during transit. If any damage is found, do not operate your unit. Please contact the retailer you purchased it from immediately. If there is any damage to the mains cable do not use the device. Always disconnect the unit from the mains supply when carrying out any cleaning of the unit.

#### **Manufacturer declarations**



In compliance with the following requirements: **RoHS Directive (2002/95/EU)** and **WEEE Directive (2002/96/EU)**, and **Battery Directive (2006/66/EU)**. If this product is ever no longer functional please take it to a recycling plant for environmentally friendly disposal. Any supplied batteries can also be recycled.

#### **CE declaration of conformity**

R&TTE Directive (1999/5/EU), EMC Directive (2004/108/EU), Low Voltage Directive (2006/95/EU).

The declarations are available on application from [certification@lambpalc.com](mailto:certification@lambpalc.com)

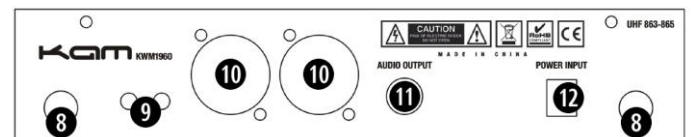
Before putting the devices into operation, please observe the respective country-specific regulations.

Please take time to read the manual, and familiarise yourself with the controls, and functions of the receiver and transmitters before operating or setting up this unit.



#### Control and Function list (receiver)

1. Power switch
2. ACTIR window
3. **\*\* vol / channel +**
4. Channel menu function keys
5. **\*\* vol / channel -**
6. LCD display
7. Antenna A & B

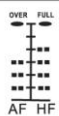


**\*\* Please note. 3&5 buttons have several functions**

To increase the volume of the microphone output press 3 to decrease the volume press the 5 button

To select one of the 16 channels press the 4 button to select the channel mode, then use 3 or 5 to select the desired frequency

#### LCD display



RF intensity and AF intensity indicator



Fix frequency, e.g. 16 channels to choose from.



Channel A or B



Use frequency

#### Installation of the receiver

Ensure the aerials on the rear panel A & B are vertical to the receiver. As shown in the picture above. Connect the power supply (DC 12-18V) to the mains supply and to the DC input on the rear panel.

#### Connection of the audio output

**Mix output:** Insert one end of the audio cable into UNBALANCED socket on the rear panel and the other end into audio amplifier or mixer MIC IN or AUX IN socket.

**Separate balanced output:** Insert one end of the audio cable into the balanced XLR socket and the other end into the amplifier or mixer MIC IN or AUX IN socket.

Operation of channel B is the same.

Push the power button and the power indicator light will light up. When the microphone is working, the CHA or CHB light on the receiver will also light up. The receiver output volume can be controlled by adjusting the volume knob.

**Attention:** When you install the receiver it should be more than 1m away from the floor and walls. Antennas should be vertical to the receiver for the best results.

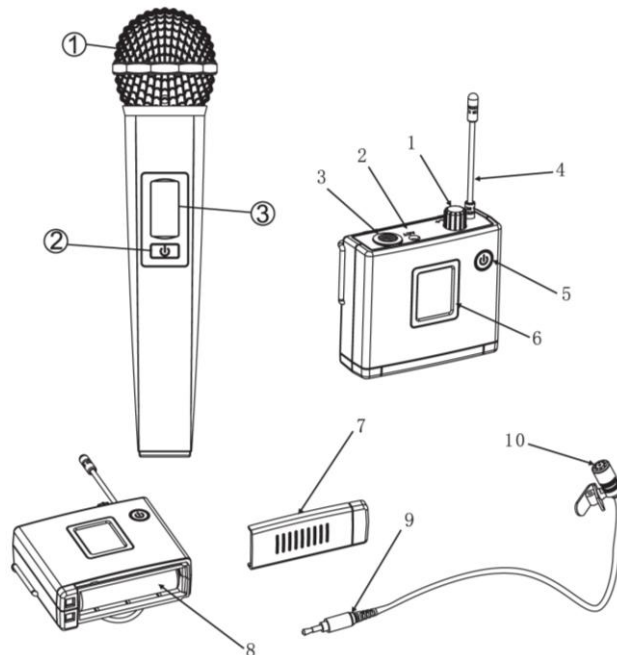
**NOTE:** Solid objects such as walls may reduce or interfere with the range or signal strength.

#### Control and function list (Handheld)

1. Grille
2. On/off switch
3. LCD display

#### Control and function list (Bodypack)

1. Volume
2. ACT
3. Input jack
4. Antenna
5. Power ON/OFF
6. LCD Display
7. Battery cover
8. 1.5V battery shell
9. Audio jack input
10. Cartridge



#### Operation of the microphone/body pack

Open the battery cover and insert 1x1.5v AA battery. Pay attention to Polarity (high quality batteries should be used for best results).

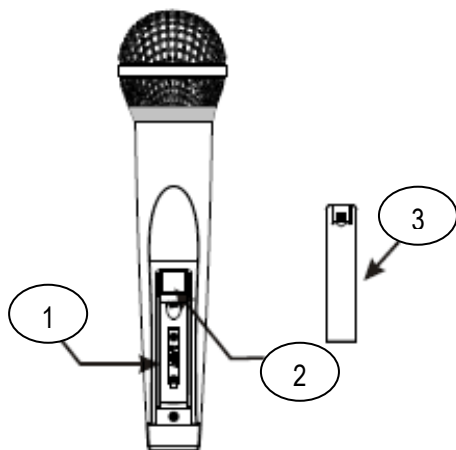
Turn on the microphone and the LCD display will light up. The LCD display will show the frequency of the microphone, please ensure this matches the frequency on either CHA or CHB on the receiver (please note CHA and CHB frequencies must not be set the same and a sufficient spacing of frequencies must be selected so as not to cause interference or channel bleed over).

#### Mute

Pressing the button again will select the mic mute mode and the audio will cease output. The mute icon will appear on the mic. Press the button again to remove mute. Press and hold the on/off button to turn the mic off.

#### Note

If the transmitter is not being used for long periods of time, removal of the battery from the unit is advised, this will prevent damage to the transmitter from the possibility of the battery leaking etc.

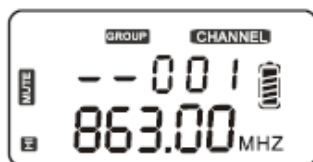


1. Battery
2. IR receiver
3. Battery cover

When using IR make sure this is in line with the IR transmitter eye on the front of the receiver (2 -ACT).

**Note:**the IR sync takes approx 30 seconds.

#### Handheld microphone LCD display



1 001 Indicates working channel 1

2 MUTE Indicates MUTE

3 863.00 MHz Indicates frequency 863.00

4  Indicates battery of TX



### Operating the receiver

There are 16 selectable frequencies available.

To set the frequency on the receiver:

1. Turn on the receiver using the power button (1).
2. Press the Channel / Menu button (4) and the frequency display will flash.
3. Use the up / down buttons to scroll through the preset frequencies available.
4. Once the desired frequency is displayed leave the unit for a few moments until the display stops flashing, this will indicate that the channel on the receiver is set.
5. Follow the same procedure to set the other side of the unit.

It is essential that the frequencies set are far enough apart as to not cross over or interfere with each other  
The channel spacing should be at least 500 MHz apart.

### Example:

CHA 863.00

CHB 863.50



CHA 863.00

CHB 863.10



### Setting the frequency on the transmitter (handheld mic)

1. First turn the transmitter off.
2. Press the Channel / Menu button (4) once on the receiver and the frequency display will flash.
3. Use the up / down buttons to scroll through the preset frequencies available.
4. Once the desired frequency is displayed leave the unit for a few moments until the display stops flashing, this will indicate that the channel on the receiver is now locked and set.
5. Remove the battery cover.
6. Turn the microphone on.
7. Hold the microphone in front of the ACTIR window (2) with the IR window above the battery compartment facing the receiver.
8. Now press and hold the Channel / Menu button (4) and the AT transmit icon  $((A \nabla B))$  on the receiver will flash and then transmit the receiver frequency onto the handheld microphone.
9. Check that the frequency on the receiver and the microphone match, and you're ready to go.

The IR transmit must be carried out fairly quickly as there is a time limit for this function, if the transmitter does not change then turn the transmitter off and start the process again.

When using IR make sure this is in line with the IR transmitter eye on the front of the IR receiver (2 - ACT). Ensure that each unit has its own set frequency. Do not have two units set to the same frequency.

### Setting the frequency on the transmitter (bodypack)

1. First turn the transmitter off.
2. Press the Channel / Menu button (4) once on the receiver and the frequency display will flash.
3. Use the up / down buttons to scroll through the preset frequencies available.
4. Once the desired frequency is displayed leave the unit for a few moments until the display stops flashing, this will indicate that the channel on the receiver is now locked and set.
5. Turn the bodypack on.

6. Hold the bodypack ACT window (2) in front of the ACTIR window (2) facing the unit. Now press and hold the Channel / Menu button (4) and the AT transmit icon  $((\overline{A})\overline{B}))$  in the receiver will flash and then transmit the receiver frequency onto the bodypack.
7. Check that the frequency on the receiver and the bodypack match, and you're ready to go.  
The IR transmit must be carried out fairly quickly as there is a time limit for this function, if the transmitter does not change then turn the transmitter off and start the process again.

When using IR make sure this is in line with the IR transmitter eye on the front of the receiver (2 - ACT). Ensure that each unit has its own set frequency. Do not have two units set to the same frequency.

It is essential that the frequencies set are far enough apart as to not cross over or interfere with each other  
The channel spacing should be at least 500 MHz apart.

#### Example:

CHA 863.00    CHB 863.50     CHA 863.00    CHB 863.10 

#### Menu

Press Channel / Menu button (4) again until scan 1 is displayed. In this mode when the transmitter (microphone / belt-pack) is turned on the receiver will automatically scan for the frequencies of these and will set itself to match the transmitters.

Press the Channel / Menu button (4) until scan 0 is displayed. This will deactivate the auto scan mode.

Press the Channel / Menu button (4) again until po.on is displayed. If both sides of the unit are set to po.on then as soon as the power adaptor is plugged in the unit will automatically turn on, without the use of the power button.

Press the Channel / Menu button (4) again until po.of is displayed. If both sides of the unit are set to po.of when the power adaptor is plugged in the unit will not turn on until the main power button is pressed.

#### Frequency options


Channel 70		Channel 38	
Preset	Frequency	Preset	Frequency
1	863.00	1	606.00
2	863.40	2	606.50
3	863.80	3	607.00
4	864.20	4	607.50
5	864.60	5	608.00
6	863.20	6	608.50
7	863.60	7	609.00
8	864.00	8	609.50
9	864.40	9	610.00
10	864.80	10	610.50
11	863.10	11	611.00
12	863.30	12	611.50
13	863.50	13	612.00
14	863.70	14	612.50
15	864.90	15	613.00
16	865.00	16	613.50

It is possible to use more than one set of microphone / receivers. Using the chart above will help you select usable frequencies. Remember to keep a good amount of spacing between channels to avoid interference or channel bleed. If using more than one receiver set for each channel keep them as far apart as possible.

### Example

Using 2 receivers (4 transmitters)

1. CH1 863.00
2. CH2 863.80
3. CH3 864.40
4. CH4 865.00

CHA 863.00      CHB 863.50       CHA 863.00      CHB 863.10 

The channel spacing should be at least 500 MHz apart.

### Volume

Do not touch the menu button. Use buttons 3 & 5 to increase or decrease the volume output of the microphone. Each microphone has its own individual volume adjustment.

### Specification

#### Comprehensive performance

Carrier frequency options	UHF 863.00-865.00 MHz / UHF 606 -614Mhz
Frequency stabilisation	Less than $\pm 30$ ppm
Dynamic range	More than 90dB
Total harmonic distortion	Less than 0.5%
Frequency response	40Hz-15KHz $\pm 3$ dB
Audio output level	0-- $\pm 400$ mV

#### Fixed receiver

Power supply	DC17V 300MA
Consume power	4w
Signal /noise ratio	More than 90dB
Image & spurious rejection	More than 80dB
Border upon channel rejection	More than 80dB
Receiving sensitivity	Less than 10dBuV (SINAD=30dB)
De-emphasis	50us

#### Handing microphone

Transmitter power	8.5mW
Modulation type	FM, F3F
Max deviation	$\pm 25$ KHz
Spurious emission	More than 40dB (with carrier)
Battery voltage	1.5V x 1
Continuous using	5 hours approx

#### Bodypack

Transmitter power	10mW
Modulation type	FM
Max deviation	$\pm 40$ KHz
Spurious emission	More than 40dB (with carrier)
Battery voltage	1.5V x 1
Continuous using	5 hours approx

**Note:** battery times are approximate and will vary depending on battery quality and conditions. For the best performance always use high quality branded batteries.